

ABSTRACT OF THE DISCLOSURE**MOLECULAR MOTOR**

5 A molecular motor in which multiple concentric cylinders (or nested
cones) rotate around a common longitudinal axis. Opposing complementary
surfaces of the cylinders or cones are coated with complementary motor protein
pairs (such as actin and myosin). The actin and myosin interact with one another
in the presence of ATP to rotate the cylinders or cones relative to one another, and
10 this rotational energy is harnessed to produce work. The concentration of ATP
and the number of nested cylinders or cones can be used to control the rotational
speed of the motor. The length of the cylinders can also be used to control the
power generated by the motor. In another embodiment, the molecular motor
includes at least two annular substrates wherein one annular substrate is coated
15 with a first motor protein and the other annular substrate is coated with a second
motor protein. The first and second motor proteins interact with each other to
move the second annular relative to the first annular substrate.